

DETAILED ACTION

Non-Final Rejection

1. Claims 1-8, 11-12, 15, 17-24, 26, 31 and 48-50 are pending for examination.
2. Examiner notes that the telephonic restriction requirement presented to Applicants on March 17th to which Applicants elected the method claims, is withdrawn in light of the pending case being filed under 371 of PCT US03/40736. Examiner has addressed all pending claims in this office action.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 11 and 19 recite the limitation "carbohydrate substrate" or "substrate" in claim 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1-5, 8, 11-12, 15, 17-24, 26, 31, 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818).

Regarding the claimed carbohydrate oxidase substrate, Baeck et al. teach laundry detergent composition comprising oxidases and a glucose substrate which may be utilized for hydrogen peroxide production by means of glucose oxidase. Suitable oxidases include those which act on aromatic compounds such as phenols and related substances. Other suitable oxidases are urate oxidase, galactose oxidase, alcohol oxidases, amine oxidases, amino acid oxidase, amyloglucosidase, and cholesterol oxidase. See col.8,ln.55-65. Baeck et al. teach that any reducing saccharide containing 5 or 6 carbon atoms can be used, e.g., glucose, galactose and galactosyl moieties can be substituted for the glucosyl moieties. See col.11,ln.3-4.

Regarding the claimed fatty acid oxidizing enzyme, Baeck et al. teach laundry detergent composition comprising lipoxygenases (col.16,ln.30). Baeck et al. teach that the above-mentioned enzymes may be of any suitable origin, such as vegetable, animal, bacterial, fungal and yeast origin. Said enzymes are normally incorporated in the detergent composition at levels from 0.0001% to 2% of active enzyme by weight of the detergent composition. See col.17,ln.5-15.

Regarding the claimed silicate builder, Baeck et al. teach a builder system including aluminosilicate materials, silicates, polycarboxylates and fatty acids, materials such as ethylenediamine tetraacetate, metal ion sequestrants such as aminopolyphosphonates, particularly ethylenediamine tetramethylene phosphonic acid

and diethylene triamine pentamethylenephosphonic acid. Though less preferred for obvious environmental reasons, phosphate builders can also be used herein. See col.17,ln.23-25.

In col.23,ln. Baeck et al. teach the pH of the treatment solution is preferably from 7 to 11, especially from 7.5 to 10.5. Highly preferred pH is between 9 to 10.5. See col.24,ln.2-4.

In example 2,col.26, Baeck et al. illustrate cotton/polycotton fabrics washed in a wash liquor of pH 9.5, the wash liquor comprising 2.6% glucose amide substrate, and 1.8% protease, lipase, and amylase enzymes, and a source of hydrogen peroxide derived from perborate monohydrate. See table of example 2 and col.26,ln.33-41.

Baeck et al. do not exemplify a method of treating textile with a carbohydrate oxidase.

Also, Baeck et al. do not exemplify a method of treating textile with a lipoxygenase fatty acid oxidizing enzyme.

Finally, Baeck et al. do not specifically teach both the oxidase and lipoxygenase within one detergent composition in a method for treating fabric.

It is noted that there is no requirement that such a condition has to be met for a proper 103 rejection. According to case law bearing on this point, the issue is what one of ordinary skill in the art would learn from a reference's disclosure when considered as a whole. *In re Courtright*, 377 F.2d 647, 153 USPQ 735, 739 (CCPA 1967). In view of that it would therefore have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising carbohydrate

oxidase, as recited by the instant claims, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with suitable oxidases such as galactose oxidase in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition.

Also, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising lipoxygenase fatty acid oxidizing enzymes, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with lipoxygenases in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition.

Finally, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to arrive at the claimed detergent comprising both the carbohydrate oxidase and lipoxygenase fatty acid oxidizing enzyme in a method of treating fabric, because, Baeck et al. motivate one of ordinary skill to formulate a textile detergent composition with suitable oxidases such as galactose oxidase and lipoxygenases in an amount from 0.0001% to 2% of active enzyme by weight of the detergent composition.

5. Claims 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) as applied to claims 1-5, 8, 11-12, 15, 17-24, 26, 31, 48 and 50 above, and further in view of Schneider et al. (US 6,165,761).

Baeck et al. are relied upon as set forth above. Although Baeck et al. suggest the utility of carbohydrate oxidases and lipoxygenases in laundry detergent compositions, they do not teach the claimed origin of the carbohydrate oxidase.

Schneider et al. teach a novel carbohydrate oxidase having the capability to oxidize maltodextrins and celldextrins more efficiently than glucose may be obtained from a strain of *Microdochium*, particularly *M. nivale*. See abstract.

It would have been obvious to one of ordinary skill in the art to derive the claimed carbohydrate oxidase from a strain of *Microdochium nivale*, since Schneider et al. teach carbohydrate oxidase derived from *Microdochium nivale* is commonly known. One of ordinary skill would have been motivated to combine the teachings of Baeck et al. with that of Schneider et al. since both references teach the utility of a glucose oxidase, a pyranose oxidase, a lipoxygenase, an L-amino acid oxidase or additional carbohydrate oxidase, which may be of microbial (bacterial, yeast or fungal) origin and may be obtained by techniques conventionally used in the art.

6. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baeck et al. (US 6,077,818) as applied to claims 1-5, 8, 11-12, 15, 17-24, 26, 31 above, and further in view of Sugio et al. (CA2444735).

Baeck et al. are relied upon as set forth above. Although Baeck et al. suggest the utility of carbohydrate oxidases and lipoxygenases in laundry detergent compositions, they do not teach the claimed origin of the lipoxygenase as recited by the instant claim 49.

Sugio et al. teach fungal lipoxygenase derived from *Magnaporthe salvinii* is useful in baking and in a detergent. See abstract.

Thus, it would have been obvious, to one of ordinary skill in the art, at the time the invention was made to derive the claimed lipoxygenase from a strain of

Art Unit: 1796

Magnaporthe salvinii since Sugio et al. teach fungal lipoxygenase derived from Magnaporthe salvinii is useful in baking and in a detergent. One of ordinary skill would have been motivated to combine the teachings of Baeck et al. with that of Sugio et al. since both references teach the utility of lipoxygenase conventionally used in the art of detergent compositions.

Conclusion

7. The prior art made of record and not relied upon are considered to be cumulative to or less pertinent than those relied upon or discussed above.
8. Applicant is reminded that any evidence to be presented in accordance with 37 CFR 1.131 or 1.132 should be submitted before final rejection in order to be considered timely.
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to PREETI KUMAR whose telephone number is (571)272-1320. The examiner can normally be reached on 7:30 am-3:30 pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/P. K./
Examiner, Art Unit 1796

/VASUDEVAN S. JAGANNATHAN/

Supervisory Patent Examiner, Art Unit 1796